EURASIAN INVADER TAKES ROOT

Story by Alexis Duxbury, Photos by Craig Bihrle

The confluence of the Yellowstone and Missouri rivers is the place where two of North Dakota's great waterways join, where ancient paddlefish congregate, and sandbars still form under the influence of the unbridled power of flowing water.

In 2001, the confluence area and lower Yellowstone also became the first documented staging areas in North Dakota for saltcedar, or tamarix, an invasive plant that has taken over large tracts of land in some western states.

The North Dakota Department of Agriculture, local weed control boards in western North Dakota, North Dakota Game and Fish Department and others snapped into action with this discovery. Perhaps it was stories from weed control boards of eastern Montana indicating that saltcedar's spread along Montana's rivers and reservoirs was far more extensive than previously imagined. Perhaps it was reports from Wyoming of seeds drifting on winds, colonizing far-flung stock ponds. Or perhaps it's the expensive lessons learned from leafy spurge and increasing emphasis placed on controlling and treating invasive infestations before they become major headaches. No matter - North Dakota went on alert.

"Saltcedar is one of those things that if you drag your feet, it will get past you so far, no one will have the monetary resources to deal with it," said Ken Eraas, North Dakota Department of Agriculture noxious weed specialist.

Eraas has seen firsthand in Wyoming the damage saltcedar can cause. "It's very alarming," he said.

With guidance from the state's Agriculture Department, an ad hoc group called the Lower Yellowstone-Missouri River Saltcedar Task Force, quickly came together in the northwest corner of the state. Active participants in the group include Jim Basaraba, weed control officer for Williams County, and Fred Ryckman and Kent Luttschwager, both with North Dakota Game and Fish. As stated by Basaraba, the purpose of the group was, and is, to get an early start on a potentially huge problem.

A survey of the lower Yellowstone and Missouri rivers above Lake Sakakawea was initiated last summer. Different agencies assumed the lead for surveying different river segments. Game and Fish personnel surveyed a 17-mile Missouri River stretch encompassing Trenton and Lewis and Clark wildlife management areas, discovering only a few scattered plants. Locations of each small infestation were mapped using a handheld GPS unit, marked, and subsequently treated with Arsenal, a broad spectrum herbicide that has been effective elsewhere at treating saltcedar.

This was the good news.

The not-so-good news was that survey work was labor-intensive and the possibility of individual saltcedar plants surviving after treatment is a threat. Also, with mile upon mile of the Yellowstone River in Montana harboring saltcedar infestations – both big and small – the likelihood of reinfestation from seeds drifting downstream is high.

Publicity over saltcedar discovered in North Dakota in 2001, and the workings of the task force, prompted others to launch searches along Lake Sakakawea and elsewhere. These searches yielded more plants, particularly along the shores of Sakakawea. Today, wild infestations have been reported from 10 North Dakota counties.

These searches indicate more work is necessary to curb the spread of saltcedar. More help is on the way, courtesy of the



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Above: Jim Houston, a North Dakota Game and Fish Department technician, helps fight the invasion of saltcedar in northwest North Dakota.

Left: Kent Luttschwager, wildlife resource management biologist for the Game and Fish in Williston, inspects a saltcedar plant along the Missouri River in northwest North Dakota.

North Dakota legislature, which appropriated \$250,000 for saltcedar control efforts in the next biennium.

Eraas said many players — weed boards, landowners, grazing associations, and others — around the state are on the saltcedar lookout as any body of water, no matter its size, is a potential infestation site. Last fall, the Eurasian invader was discovered on state-managed land in southeast North Dakota in Sargent County.

"That's almost a 200 mile jump (from western North Dakota), which tells us we can't just concentrate our efforts on lakes and streams in western North Dakota," he said. "We are really emphasizing a statewide effort."

Biology of a Pest

Saltcedar, a shrub or small tree native to Eurasia, was at one time planted in western states for erosion control. For much of the year, saltcedar is an unassuming plant. Its leaves are small and scale-like, giving the plant a feathery appearance. In early summer, saltcedar is at its peak in terms of visibility, bearing numerous showy clusters of delicate, pink, five-petal flowers.

From a biological standpoint, saltcedar

seeds are noteworthy. The seeds are tiny – no bigger than flakes of pepper – and produced in large quantities. Each seed is tipped with a tuft of hair twice the length of the seed itself. This tuft allows the seed to be dispersed by flowing water and prairie winds. Seeds also lack an endosperm, an internal storehouse of food, and have no dormancy requirements, generally living less than two months, so seeds must germinate almost immediately if they are to survive.

Young saltcedar seedlings are sensitive to their local environment. Ideal conditions for survival are constantly moist soil, high water table, and sunny, open ground with little or no competition from other plants. Sandbars, stream banks, shorelines and floodplains are favored colonization sites.

When grown, saltcedar may form dense groves of plants several feet high and many acres in size. The rub is that large saltcedar colonies pull considerable amounts of salt from the soil and then transfer it through leaves back onto the ground. This increased surface salinity may hinder native plants from taking root. Even when you get rid of the plant, scientists say, reclamation is a challenge because it's difficult to get anything to grow.

"I feel saltcedar has the most potential for long-term land and water degradation of any weed we have encountered, by far," Eraas said.

Some researchers have said where large infestations occur, wildlife don't seem to have much use for the plant that destroys native riparian vegetation. Saltcedar seeds, they say, have no protein and are too small to make much of a meal for most animals, while its scale-like leaves offer little, if any, suitable forage for browsing animals.

While ornamental plantings of saltcedar have long been known in North Dakota, it was not until 2001 that naturalized plants were documented growing wild. These plants were found along the lower Yellowstone River in McKenzie County. Since saltcedar seeds are often carried downstream by flowing water and infestations have been known along the Yellowstone River in Montana for several years, the presence of saltcedar on the lower Yellowstone comes as no surprise.

The North Dakota Department of Agriculture listed saltcedar as a noxious weed in 2002, something several western states have already done. With this listing, sale of saltcedar in the state ceased and coordinated efforts to control the spread became easier.

The Game and Fish Department manages 20 wildlife management areas on the Missouri River System, and Department personnel will increase efforts to detect and treat saltcedar in those areas, as well as on neighboring lands in cooperation with landowners. The public is asked to contact their local Game and Fish office if saltcedar is spotted on a Department WMA.

If saltcedar is spotted elsewhere, contact the local weed control officer. And if you have it growing in your yard, dig it up or destroy it with an appropriate herbicide.

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Large saltcedar colonies pull large amounts of salt from the soil and then transfer it through leaves back onto the ground, hindering native plants from growing.



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